

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8/28/08 has been entered.

The response filed **8/28/08** presents remarks and arguments to the office action mailed **5/28/08**. Applicant's request for reconsideration of the rejection of claims in the last office action has been considered.

Applicant's arguments have been fully considered but they are not deemed to be persuasive. Rejections and/or objections not reiterated from previous office actions are hereby withdrawn. The following rejections and/or objections are either reiterated or newly applied. They constitute the complete set presently being applied to the instant application.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Status of Claims

Claims 70-82 are newly added and are pending. Claims 34, 44 and 64-69 have been cancelled.

Withdrawn Claim Rejections - 35 USC § 112

Claims 34, 44, 64-69 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement is withdrawn. ***The claims have been cancelled thus the rejection is moot.***

New Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

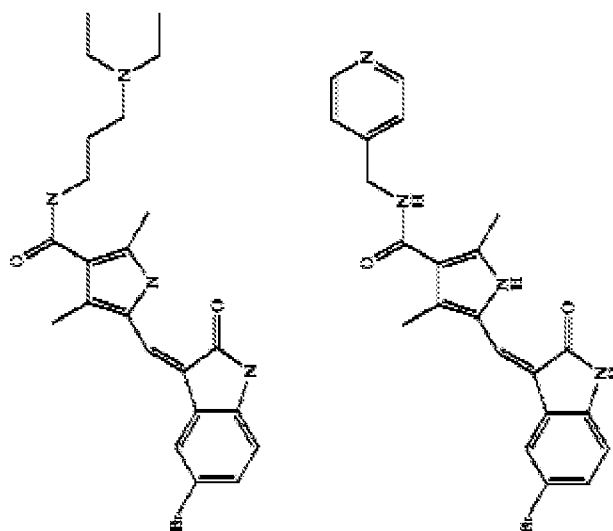
1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 70-82 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tang et al., US 6,573,293 (of record) and/or Guan et al US 6,653,308 (IDS 3/17/05) in view of Applicant's own admission and further in view of David Goltzman J. Clin. Invest. 107:1219-1210 and Ramon et al. J. Trauma-Injury Infection and Critical Care, 36(4): 597 Abstract only and WWW.ahrq.gov/clinic/epesums/osteosum.

Tang et al. teach, administering compounds for the treatment of solid tumors such as breast, prostate, as required by instant claims 70-77 to inhibit the phosphorylation of colony stimulating factor 1 receptor (CSF1R). See col. 1, lines 37-50; col. 2, lines 4-10 and col. 166, lines 1-11. Also see col. 166, lines 29-30 wherein

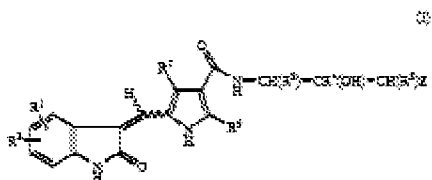


the compounds are

(see col. 64

compounds 71 and 74). Note that the core structure of instant claim 70 would have resulted in the above compounds from the varying substituents recited in claims 70-77.

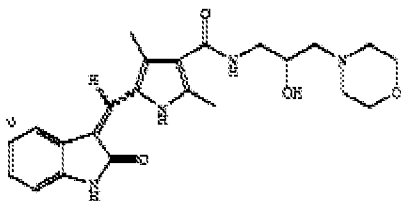
Guan et al teach administering compounds of



formula

(see col. 1, lines 1-65), with the same

substituents recited in claims 70-77 for the treatment of cancers such as breast cancer, melanoma, see col. 2, lines 10-25. One such compound as required by instant claim 77



is

as required by instant claims 77-78, see col. 41,

lines 1-65, wherein these compounds inhibit the phosphorylation of colony stimulating factor 1 receptor (CSF1R). See col. 1, lines 40-49 and col. 2, lines 4-10.

Both Tang et al. and Guan et al. fail to teach the method of treating osteolysis/osteoporosis in the post menopausal patient population.

Applicant's admission Goltzman, Ramon and WWW.ahrq.gov/clinic/epesums/osteosum are introduced to tie the relevance of these cancers with osteolysis and post menopausal patients.

Based on Applicants own admission: [0154] other osteolytic diseases that can be treated according to the present invention are more localized. A particular example is metastatic tumor-induced osteolysis. In this condition, bone cancers or bone

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metastases induce localized osteolysis that causes pain, bone weakness and fractures. Such localized osteolysis also permits tumors to grow larger by creating more space for them in the bone and releasing growth factors from the bone matrix.

Cancers presently known to cause tumor-induced osteolysis include hematological malignancies (e.g., myeloma and lymphoma) and solid tumors (e.g., breast, prostate lung, renal and thyroid), all of which the present invention contemplates treating.

Goltzman teaches that bone is a highly hospitable environment for metastatic tumors such as breast and prostate to show as required by instant claim 79. And the reference further teaches that the most common skeletal manifestation of malignancy is focal osteolysis in association with metastases. See entire reference. Thus the reference teaches the set population to have osteoporosis or osteolysis as required by instant claim 81.

Ramon teaches osteolysis of the bone from a malignant lesion in a post menopausal patient. See entire abstract.

WWW.ahrg.gov/clinic/epesums/osteosum teaches that over 14 million women are affected with low bone density over age 50 (post menopausal age) see entire document.

Based on the above one of ordinary skill in the art would have been motivated to use the compounds of the prior art and treat phosphorylation of colony stimulating factor 1 receptor in a patient with metastatic cancer because the compounds are known in the prior art to inhibit phosphorylation in tumors.

It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to use the above compounds for inhibition of excessive osteolysis in a patient with cancer. One of ordinary skill in the art would have known that breast carcinoma commonly metastasizes to the skeleton in patients with advanced disease to cause bone destruction, therefore employing the compounds to treat osteoporosis in patients with these cancers would have been obvious because the art teaches that. Also a skilled artisan would recognize that if both the prior art and Applicant compound/composition are the same, the properties of the compound are expected to be the same because a compound is inseparable from its properties. Therefore, once the prior art and the claimed compound are the same one of ordinary skill in the art would expect the compound to function or behave the same.

One of ordinary skill in the art would have been motivated to use the claimed compounds to treat osteolysis of a malignant lesion in a post menopausal patient or treat post-menopausal women because it is evident that osteoporosis is common in post menopausal women also. Thus motivation to administer the drug to a post menopausal patient and also to post menopausal patients suffering from metastases of breast cancer as discussed supra.

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SHIRLEY V. GEMBEH whose telephone number is (571)272-8504. The examiner can normally be reached on 8:30 -5:00, Monday- Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MICHAEL HARTLEY can be reached on 571-272-0616. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael G. Hartley/
Supervisory Patent Examiner, Art Unit 1618

/S. V. G./
Examiner, Art Unit 1618
10/21/08